NEW SPECIES

"*Ihubacter massiliensis*": a new bacterium isolated from the human gut

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Abstract

We report here the main characteristics of "*Ihubacter massiliensis*," strain Marseille-P2843^T (CSUR P2843), a new genus of the *Clostridiales* family isolated from a stool sample from a healthy 29-year-old woman.

Keywords: Culturomics, *Ihubacter massiliensis*, taxonomy, taxonogenomics, human gut
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In April 2016, we isolated, as a part of a culturomics study [1], a strain named Marseille-P2843 from the stool sample of a 29-year-old healthy Senegalese volunteer patient. The study was approved by the Institut Fédératif de Recherche 48 (Faculty of Medicine, Marseille, France), under agreement 09-022, and the patient provided informed consent. The strain could not be identified by our systematic matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) screening on a MicroFlex spectrometer (Bruker Daltonics, Bremen, Germany) [2]. The initial growth of the strain was obtained by culture on 5% sheep's blood–enriched Columbia agar (bioMérieux, Marcy l'Etoile, France) after 3 days' incubation in an anaerobic atmosphere at 37°C. The growing colonies on 5% sheep's blood agar were beige and had a diameter of about 0.5 to 1 mm. Strain Marseille-P2843 cells are Gram-negative rods, nonmotile, and non–spore forming, ranging in length from 2.5 to 3 μm and in diameter from 0.5 to 0.7 μm. Strain Marseille-P2843 is strictly anaerobic and has no catalase and no oxidase activities. We sequenced the complete 16S rRNA gene using universal primers FD1 and RP2 (Eurogentec, Angers, France) as previously described [3], using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France). Strain Marseille-P2843 exhibited a 16S rRNA gene sequence identity of 91.8% with *Eubacterium sulci* ATCC 35585^T (GenBank accession number CP_012068), the phylogenetically closest species with standing in the nomenclature (Fig. 1), which classifies it as a member of a new genus within the *Clostridiales* family in the *Firmicutes* phylum [4]. On the basis of previously published descriptions, *Eubacterium sulci* cells are Gram-negative and non-spore-forming rods [4,5]. This obligatory anaerobic bacteria species was isolated from the human gingival sulcus. Strain Marseille-P2843 exhibited a 16S rRNA sequence divergence of >5% with *Eubacterium sulci,* its closest related species with standing in nomenclature [6], which classifies it as the first representative of a new genus, *"Ihubacter"* gen. nov. (*i.hu,* N.L. gen. n. *ihu,* based on the acronym IHU, the Institut Hospitalo-Universitaire in Marseille, France, where the type strain was isolated; bac′ter, N.L. masc. n. *bacter,* "rod"). Strain Marseille-P2843^T is the type strain of *"Ihubacter massiliensis"* gen. nov., sp. nov. (ma.si.li.en′sis, L. masc. adj. *massiliensis,* "of Massilia," the Latin name of Marseille, where *"I. massiliensis"* was isolated).

MALDI-TOF MS spectrum accession number

The MALDI-TOF MS spectrum of "*I. massiliensis*" is available online (http://www.mediterraneeinfection.com/article.php?laref=256&titre=urms-database).

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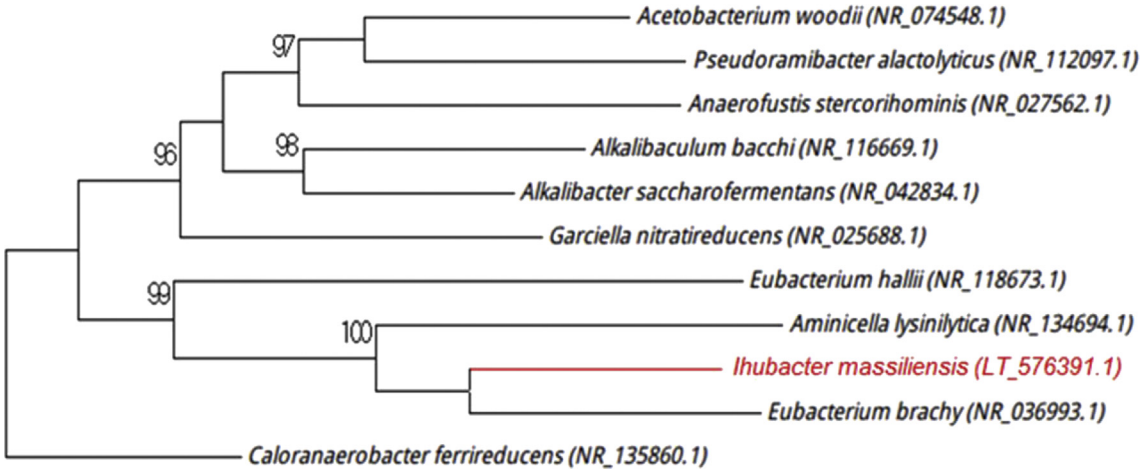

FIG. 1. Phylogenetic tree highlighting position of "*Ihubacter massiliensis*" strain Marseille-P2843^T (red) relative to other phylogenetically close members of family *Porphyromonadaceae*. Numbers at nodes are percentages of bootstrap values obtained by repeating analysis 500 times to generate majority consensus tree. Only values greater than 95% are displayed. Scale bar represents 2% nucleotide sequence divergence.

Nucleotide sequence accession number

The 16S rRNA gene sequence of the strain Marseille-P2843^T was deposited in GenBank under accession number LT576391.

Deposit in a culture collection

Strain Marseille-P2843^T was deposited in the Collection de Souches de l'Unité des Rickettsies (CSUR) under number P2843.

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Conflict of Interest

None declared.

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